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ABSTRACT

This course guide for a photography course is one of four developed for the graphic communications area in the North Dakota senior high industrial arts education program. (Eight other guides are available for two other areas of Industrial Arts--energy/power and production.) Part 1 provides such introductory information as a definition and instructional objectives for Industrial Arts. Part 2 contains the course rationale and objectives; guidelines for implementation; taxonomic structure; course description including length, credit, prerequisites, and student competencies; suggested instructional units with required number of class periods; and 19 units. Each unit includes some or all of the following material: unit objectives(s), topic outline, and selected student competencies to be developed through sample coordinated learning activities. Unit titles are Introduction and History of Photography, Photographic Principle and Theory, The Camera, Taking Pictures and Film Exposure, Photographic Laboratory Safety, Film Development, Projection Prints, Print Processing, Evaluation of Negatives and Prints and the Possible Improvements, Finishing Techniques, Properties and Characteristics of Photographic Materials, Photo Communications, Negative Making Methods, Photographic Chemistry and Formulas, Creative Darkroom Techniques, Lighting, Photographic Equipment and Materials Selection, Darkroom Design and Layout, and Specialized Photography. A reference list is appended. (YLB)

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PHOTOGRAPHY

(GRAPHIC COMMUNICATIONS)

INDUSTRIAL ARTS SENIOR HIGH--LEVEL II

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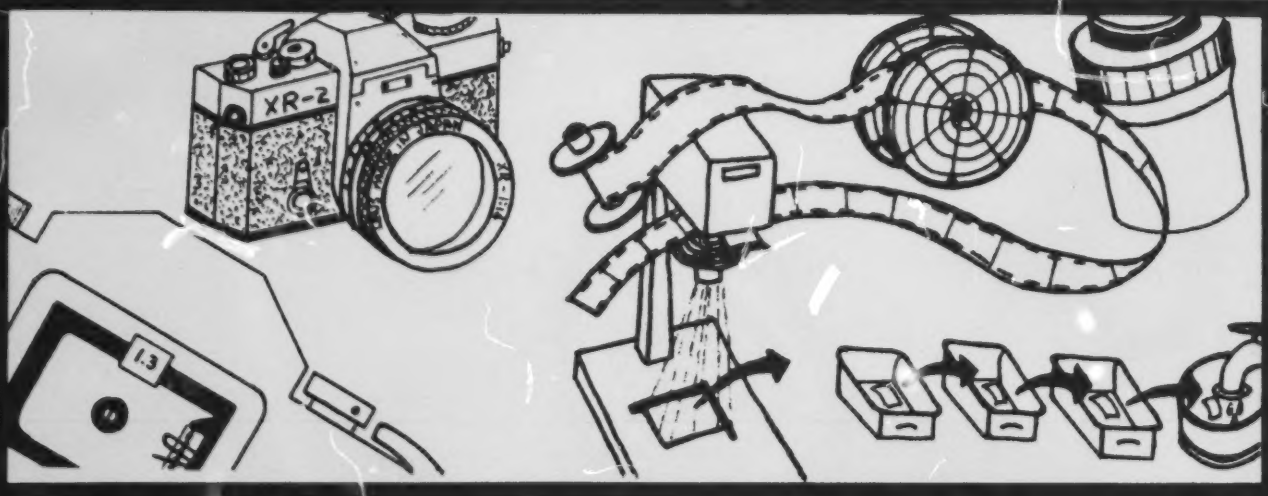
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NORTH DAKOTA

NORTH DAKOTA STATE BOARD FOR
VOCATIONAL EDUCATION
Bismarck, North Dakota

CE-030562

NORTH DAKOTA SENIOR HIGH INDUSTRIAL ARTS CURRICULUM GUIDES

**Myron Bender, Project Director
University of North Dakota
Department of Industrial Technology
Grand Forks, North Dakota**

**Supported by
The North Dakota State Board For Vocational Education
Research Coordinating Unit
900 East Boulevard
Bismarck, North Dakota 58505**

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PREFACE

One of the biggest challenges facing education today is keeping the instructional content current. Industrial Arts in particular must be quick to respond to changes in our technological society. For many years, North Dakota has offered quality industrial arts programs to students in the public schools. Credit for this is due to the teachers who have shown the desire to continually improve programs, keep their content current, and make instruction relevant.

The Industrial Arts curriculum has boundless potential for courses and program development. However, this program possibility excites the imagination of teachers to offer endless number of courses which causes a need to determine what is of greatest value for students to experience.

Thus, the development of an appropriate or model curriculum requires a critical examination of several undergirding questions: What is the overall responsibility of Industrial Arts? What Industrial Arts goals are appropriate for the different grades or school levels? What courses constitute a meaningful curriculum for these goals to be realized? What shall be the scope and sequence of the total curriculum? The answers to these questions have been addressed by a North Dakota Industrial Arts Master Plan curriculum committee and are recorded in the North Dakota Senior High Industrial Arts Program of Studies booklet.

The Program of Studies describes the complete secondary school industrial arts education. The Program of Studies Booklet emphasizes the Level II Senior High programs with specific courses, course descriptions, objectives and units of instruction. The Junior High-Level I program is dealt with in a general basis for the purpose of articulating the two levels within the total secondary school industrial arts program.

Three types of Industrial Arts programs are included in the Program of Studies along with the individual courses which constitute the complete secondary school curriculum:

1. **ORIENTATION AND EXPLORATION--** Level I program designed for grades seven through nine.

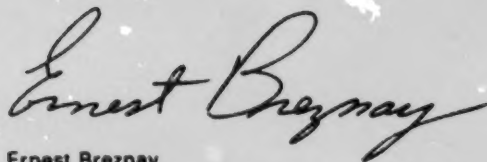
The purpose of this program is to provide students with first-hand exploratory experiences in the four technical cluster areas. The learning experiences should provide an awareness of the impact of industry and its associated technologies on the lives of individuals. Furthermore, this program assists individuals in making informed and meaningful occupational/career choices.

2. **PERSONAL ENRICHMENT--** The program designed to prepare students with a general education of technological literacy, avocational skills and consumer information. This is purely an elective program of students for students who desire to gain an understanding of the technical concepts for personal satisfaction.

3. **PRE-TECHNICAL--** This program provides concentrated and specialized technical courses for grades ten through twelve. These courses are articulated with the Level I technical cluster areas. Students at this level have a wide range of interests, abilities, and life aspirations. Therefore, the key element for the senior high pre-technical program is flexibility to meet the varied needs of learners. The program is designed to prepare students for advanced educational or training programs.

The North Dakota Senior High Program of Studies identified twelve different courses recommended to be offered in grades ten, eleven and twelve. The model curriculum lists four courses for each of three technical areas: (1) Energy/power, (2) Graphic Communications, and (3) Production. Individual course guides have been developed for each of the twelve courses recommended for the senior high curriculum. This being one of the twelve course guides. Similar guides have been developed for the remaining eleven.

Each course guide contains the course rationale, objectives, content, units and selected student competencies to be developed along with student learning activities. The primary aim of the course guides is to provide meaningful direction and still leave opportunity for individual teacher creative approaches in meeting the diverse needs of unique school populations. The course guides not only propose to assist teachers and administrators in keeping their programs up-to-date, but also to promote industrial arts education program uniformity among North Dakota schools.



Ernest Breznay
State Industrial Arts Supervisor
North Dakota State Board for Vocational Education
July, 1981

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The North Dakota Industrial Arts profession is indebted to the following individuals who gave their time and talents in the development of the Twelve Senior High Industrial Arts course guides. These teachers and teacher educators attended an Organizational meeting, participated in a curriculum writing seminar, and developed individual course guides during 1980 & 1981.

PROJECT STAFF

Dr. Myron Bender, Project Director
Department of Industrial Technology
University of North Dakota
Grand Forks, North Dakota 58202

Mr. Ernest Breznay, Coordinator
State Industrial Arts Supervisor
North Dakota State Board for
Vocational Education
Bismarck, North Dakota 58505

COURSE GUIDE WRITERS & CONSULTANTS

PRODUCTION COURSES

Dr. Robert Claus, Writer
Department of Industrial Education
Valley City State College
Valley City, North Dakota 58072

Mr. Larry Gander, Writer
Mayville-Portland High School
Mayville, North Dakota 58257

Mr. Isaac Hill, Writer
Langdon High School
Langdon, North Dakota 58245

Mr. Arlo Mittleider, Writer
Page High School
Page, North Dakota 58064

Dr. Luvern R. Eickhoff, Consultant
Department of Industrial Technology
University of North Dakota
Grand Forks, North Dakota 58202

GRAPHIC COMMUNICATIONS COURSES

Mr. Eddie Poehls, Writer
Tolna High School
Tolna, North Dakota 58380

Mr. John Torgerson, Writer
Fargo South High School
Fargo, North Dakota 58102

Mr. Keith Stenehjelm, Writer
Department of Industrial Technology
University of North Dakota
Grand Forks, North Dakota 58202

Mr. Thomas Sweet, Writer
Bismarck High School
Bismarck, North Dakota 58501

Dr. Wan-Lee Cheng, Consultant
Department of Industrial Technology
University of North Dakota
Grand Forks, North Dakota 58202

ENERGY / POWER COURSES

Mr. Allen Lawrence, Writer
Thompson High School
Thompson, North Dakota 58278

Dr. Don Mugan, Writer
Industrial Education Department
Valley City State College
Valley City, North Dakota 58072

Mr. Lyle Siedschlaw, Writer
Linton High School
Linton, North Dakota 58552

Dr. John Sinn, Writer
Department of Industrial Technology
University of North Dakota
Grand Forks, North Dakota 58202

Dr. Herbert J. Auer, Consultant
Department of Industrial Technology
University of North Dakota
Grand Forks, North Dakota 58202

STAFF ASSISTANTS

A special thanks is due to individuals who assisted with the design, layout, typing, and printing of the twelve industrial arts course guides.

Dr. Wan-Lee Cheng
Production Coordinator
Department of Industrial Technology
University of North Dakota
Grand Forks, North Dakota 58202

Mrs. Sandy Tessier
Secretary/Typist
Department of Industrial Technology
University of North Dakota
Grand Forks, North Dakota 58202

Mr. Paul Franzmeier, Artist
Department of Industrial Technology
University of North Dakota
Grand Forks, North Dakota 58202

Mr. Keith Stenehjem
Production Assistant
Department of Industrial Technology
University of North Dakota
Grand Forks, North Dakota 58202

Mrs. Roslyn O. Groomes
Comp/Set Typesetter
Department of Industrial Technology
University of North Dakota
Grand Forks, North Dakota 58202

Mr. Douglas Hisey, Jr.
Layout Assistant
Department of Industrial Technology
Grand Forks, North Dakota 58202

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BASIC BELIEFS ABOUT INDUSTRIAL ARTS

INDUSTRIAL ARTS IS

- *an educational discipline founded upon the knowledge base of technology - the means by which material things are produced.
- *an instructional program affording boundless opportunities for learning how technology has been, is now and will be basic to human desires and needs.
- *a fundamental educational program that can serve educational priorities, whether they are academic education, general education, vocational education, career education, ad. inf.
- *an activity based curriculum enabling students to learn through doing.
- *logically a discipline with a curriculum continuum from grade K through 12.

INDUSTRIAL ARTS IS JUSTIFIED BECAUSE

- *all persons need to know about the technological environment, the material culture, and industry because they are economically, socially and emotionally affected by them.
- *all persons must make a career choice from an extremely large and increasing number of occupations that are affected by technology; therefore, they should have opportunities to develop interests, uncover talents, explore technical and applied science fields and study occupations.
- *all persons must select, buy, use, and maintain the products of industry -- houses, automobiles, appliances, clothes, furniture and items of a never ending list. A knowledge of products, their manufacture, characteristics, advantages and disadvantages makes for intelligent consumption.
- *all persons need recreational, leisure time and avocational outlets.
- *all persons need to have opportunities to develop planning, creative, problem solving and technical skills in harmony with their inherent desire to seek the better way.

INDUSTRIAL ARTS CAN HELP THE STUDENT TO

- *gain an understanding of industry and technology.
- *discover interests and talents.
- *develop techniques in problem solving.
- *develop basic skills in the safe use of tools and machines.
- *make informed and meaningful occupational choices.
- *acquire interests in avocational pursuits and hobbies.
- *develop safe working habits.
- *apply other school subjects.
- *become a wiser consumer.
- *develop creativity.
- *develop pride in work well done.
- *work cooperatively with others.

THE INDUSTRIAL ARTS MISSION

The mission of Industrial Arts Education is to assist the student in developing an understanding about industry and technology and in the discovery and development of individual potential.

GOALS

Consistent with their abilities, interests and educational needs:

1. Industrial Arts students at the middle or junior high school level will be aware of employment and/or self-employment opportunities and requirements for use in making career choices and in determining their educational programs.
2. Industrial Arts students at the senior high school level will acquire technical competencies in preparation for advanced vocational or technical education programs.
3. Industrial Arts students at the senior high school level will acquire competencies that lead to responsibly citizenship through technological understanding, consumer knowledge and the productive use of leisure time.

INDUSTRIAL ARTS: AN OFFICIAL DEFINITION

Industrial Arts education programs means those education programs which pertain to the body of related subject matter, or related courses, organized for the development of understanding about the technical, consumer, occupational, recreational, organizational, managerial, social, historical, and cultural aspects of industry and technology including learning experiences involving activities such as experimenting, designing, constructing, evaluating, and using tools, machines, materials, and processes which provide opportunities for creativity and problem solving or assist individuals in the making of informed and meaningful occupational choices or which prepare them for entry into advanced trade and industrial or technical education programs.

INDUSTRIAL ARTS INSTRUCTIONAL OBJECTIVES

Industrial Arts students at the Senior High School Level will acquire competencies that lead to responsible citizenship through technological understanding, consumer knowledge and the productive use of leisure time. The program stresses the following instructional objectives:

1. Develop an insight and understanding of industry and technology, its place in our society and the free enterprise system.
2. Discover and develop individual talents, aptitudes, interests, and potentials as related to industry and technology.
3. Develop an understanding of industrial processes and the practical application of scientific principles.
4. Develop technical problem-solving and creative abilities involving the use of materials, processes, and products of industry and technology.
5. Develop an understanding of industrial and technological career opportunities and their requirements and develop those traits which will help students obtain and maintain employment.

As determined by Title II of PL No. 94-482, the Vocational Education Act of 1976 and the State Board for Vocational Education, the purpose of funding industrial arts programs with vocational monies will be to:

1. Assist individuals in the making of informed and meaningful occupational and educational choices.
2. Prepare individuals for enrollment in advanced or highly skilled vocational and technical programs.

NORTH DAKOTA INDUSTRIAL ARTS CURRICULUM

Program Scope and Sequence Model

JUNIOR HIGH LEVEL I

(7-9)

Orientation and Exploration

SENIOR HIGH LEVEL II

(10-12)

Personal Enrichment

Pre-Technical

ELEMENTARY LEVEL

(K-5)

Awareness

At the elementary level, learning experiences in industrial arts will be directed primarily toward the child's development of an awareness of industry/technology and the world of work. The concepts and activities will be integrated with the elementary curriculum to enrich and reinforce the common learning areas.

INSIGHTS INTO INDUSTRY & TECHNOLOGY

A broad overview of industry and technology. Learning experiences will be directed toward the student's exploration of the historical, present, and future potentials of industry and technology.

GRAPHIC COMMUNICATIONS TECHNOLOGY

DESIGN/DRAFTING
PHOTOGRAPHY
GRAPHIC ARTS
CONSTRUCTION
DRAFTING
INDIVIDUAL TECHNICAL
PROBLEMS

MANUFACTURING TECHNOLOGY

PRODUCTION

WOOD TECHNOLOGY
PLASTIC TECHNOLOGY
METAL TECHNOLOGY
INDUSTRIAL CRAFTS
INDIVIDUAL TECHNICAL
PROBLEMS

CONSTRUCTION TECHNOLOGY

ENERGY/POWER TECHNOLOGY

ENERGY SOURCES
POWER TECHNOLOGY
ELECTRICAL / ELEC-
TRONIC TECHNOLOGY
TRANSPORTATION
TECHNOLOGY
INDIVIDUAL TECHNICAL
PROBLEMS

THE INDUSTRIAL ARTS PROGRAM OF STUDIES

LEVEL	GOAL	PROGRAM
II HIGH SCHOOL (Grades 10, 11, & 12)	1. Personal Enrichment 2. Pre-Technical	GRAPHIC COMMUNICATIONS TECHNOLOGY *Design/Drafting *Photography *Graphic Arts *Construction Drafting *Industrial Technical Problems
		ENERGY/POWER TECHNOLOGY *Energy Sources *Power Technology *Electrical/Electronic Technology *Transportation Technology *Individual Technical Problems
		PRODUCTION TECHNOLOGY *Wood Technology *Metal Technology *Plastic Technology *Industrial Crafts *Individual Technical Problems ----- INDIVIDUAL TECHNICAL PROBLEMS (Multiple Offerings)
I JUNIOR HIGH SCHOOL (Grades 7, 8, & 9)	1. Orientation 2. Exploration	*Insights into Industry and Technology *Graphic Communications Technology *Manufacturing Technology *Construction Technology *Energy/Power Technology

PROGRAM STANDARDS FOR INDUSTRIAL ARTS

ELEMENTS OF QUALITY INDUSTRIAL ARTS PROGRAMS

The success and quality of programs in industrial arts education depends upon elements that influence the quality of programs. Industrial arts must be responsive to the following elements:

- A. GOALS AND OBJECTIVES:** Program goals and objectives are established that provide the inspiration and guidance in program development, operation and evaluation.
- B. INSTRUCTIONAL STAFF:** The instructional staff is competent and meet necessary qualifications.
- C. INSTRUCTIONAL PLAN:** Selected subject matter is appropriate to learner's level and consistent with curriculum and course goals and objectives.
- D. STUDENT ORGANIZATIONS:** The establishment and operation of effective student organizations.
- E. FACILITIES AND EQUIPMENT:** Instructional facilities are well-designed, located and supportive of accomplishing curricular goals. (Refer to Educational Specifications for Industrial Arts Instructional Facilities Handbook, 1978.)
- F. SPECIAL NEEDS:** The program must provide for disadvantaged and handicapped students.
- G. ADVISORY COMMITTEES:** The establishment and effective use of industrial arts advisory committees.
- H. GUIDANCE:** The teacher's role in guidance.
- I. ADMINISTRATION:** Administration of the industrial arts program.
- J. EVALUATION:** Evaluation procedures are planned and implemented to assure continual program improvement.

NOTE: For further information on program standards, refer to the NORTH DAKOTA VOCATIONAL/TECHNICAL EDUCATION PROGRAM STANDARDS, Section 11.1 to 11.7.

INDUSTRIAL ARTS COURSE CODE NUMBERS (Vocationally Funded)

Insights Into Industry and Technology	10001
Construction Technology	10011
Manufacturing Technology	10021
Wood Technology	10023
Metal Technology	10026
Plastic Technology	10029
Energy and Power Technology	10031
Electrical/Electronic Technology	10033
Energy Sources	10038
Power Technology	10039
Graphic Communications Technology	10051
Graphic Arts	10052
Design/Drafting	10053
Photography	10054
Construction Drafting	10056
Transportation	10061
Industrial Crafts	10080
Individual Technical Problems	10091
Individual Technical Problems	10092

PART II:
PHOTOGRAPHY
COURSE GUIDE
(# 10054)

PHOTOGRAPHY

Rationale:

A study of photography within graphic communications provides an opportunity for a concentrated and specialized study of photographic industries. An atmosphere is provided for all students to develop pre-technical skills and knowledge into the economic, social and technological aspects of visual communications in changing society.

Photography involves students in meaningful instructional activities and develops self-direction, continuous learning, and creativity.

Course Objectives:

- (1) This course will provide the student with introductory and practical experience in black/white photography.
- (2) This course will provide the student with the necessary information and techniques in photographic theory, camera function, darkroom practices, light integration, photographic materials, exposure, and processing chemistry.
- (3) This course will provide the student with instruction related to special effect techniques, lighting considerations, camera and darkroom accessories, darkroom design and set-up, and specialized photography.

Guidelines For Implementation

Success in the classroom or laboratory depends on many factors. Foremost among these is the planning effort on the part of the teacher. Educational programs must be flexible and adaptable. They must be flexible enough to remain adaptable to all locales, in numerous types of facilities, and with students possessing differing values and interest. Therefore, a successful program must be capable of application in both small and large schools.

The industrial arts program recommended by these course guides are designed to meet individual student needs. They provide teachers with guidelines for a well balanced program with suggested teacher options in each of the three major technical study areas: (1) Graphic Communications; (2) Energy/Power; and (3) Production. The North Dakota secondary school industrial arts program suggests three levels of learning with an alternative curriculum approach at the Level II for those schools that cannot offer specific courses identified for each of the three technical study area due to the size of enrollments or other limiting factors.

Graphic Communications Technical Area Guidelines

The recommended scope and sequence of course offerings for the graphic communications technical study area is illustrated on the sample program model on page 13. The Level I course serves as an orientation and exploratory learning experience and is recommended as a prerequisite to the four specific courses listed at Level II. The senior high Level II courses provide concentrated and indepth exploratory experiences in the four major components involved in Graphic Communications:

(1) Design/Drafting; (2) Graphic Arts; (3) Construction Drafting; and (4) Photography. Since students at this level display a wide range of interests, abilities, and life goals, the industrial arts program must provide a variety of learning and course options to meet individual student needs. To meet the varied student needs, it is recommended that the specific course options be made available to students when possible. For the smaller and mid-sized schools, it may not be feasible to offer all four of the specific courses identified in Level II. If that should be the case, it is recommended that one or two of the courses be offered and an ITP (Individual Technical Problems) course be offered as a Level II alternative. (See ITP Course specifications on page 14.) This course is designed to provide multiple learning experiences in graphic communications to meet individual needs.

The Level III ITP Course (Code #10092) is suggested for students in larger programs who have had the Level II indepth exploratory courses in graphic communications and desire to study a specialized aspect related to design/drafting, graphic arts, construction drafting, and/or photography. (See pages 15 and 16 for specific Level III ITP Course specifications and technical problem options).

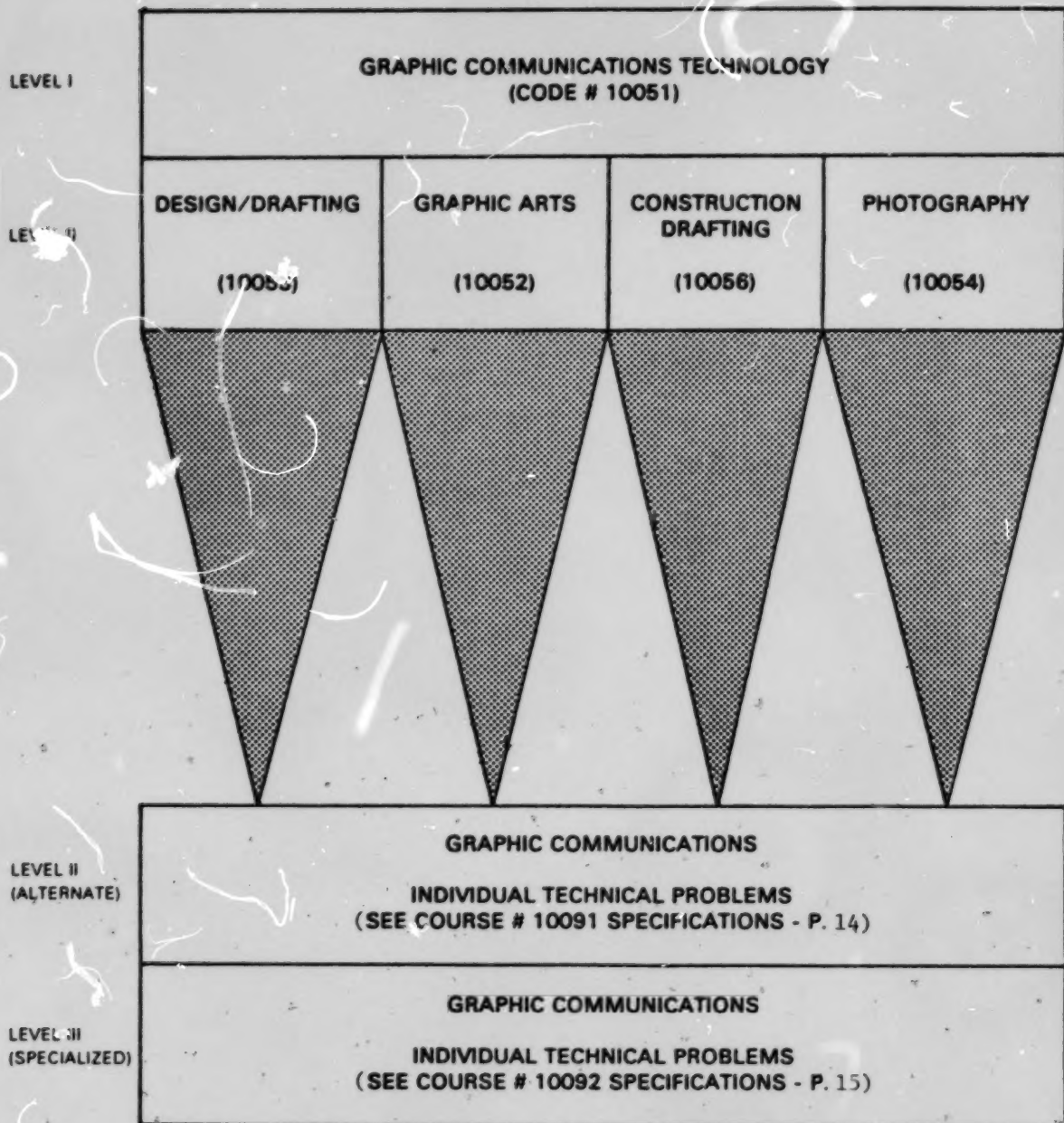
Guidelines For Implementing the Photography Course

This Instructional Guide is designed to assist teachers, supervisors, administrators, and teacher-educators as they organize an industrial arts course in photography within graphic communications in the State of North Dakota.

This guide will provide the instructor with suggested procedures, learning activities, and course resources to assist in setting up a program which corresponds to the students needs. It is a fact, the school day is limited in time and it is difficult to locate and acquire the vast amount of available materials. However, the instructor in this field will choose those concepts most applicable to his or her school.

As the instructor, responsible for implementing the content of this guide, he or she should notice that the photography course is designed for either 18 or 36 weeks. The content of the 18 week course is identified by the suggested instructional units preceeded by an asterisk. It is recommended that the student acquires graphic communications, Level I as a pre-requisite to this course.

Texts indicated in this guide, are used only as examples. The instructor may select the text which is applicable to his or her needs.



Sample Program Model

INDIVIDUAL TECHNICAL PROBLEMS

COURSE CODE: 10091

This individual technical problem course is designed for students who have not had the opportunity to enroll in specific Level II subject matter courses in the Graphic Communications Technology cluster area. The course is designed to provide a means for meeting individual student needs through the offering of multiple activities in a number of technical areas in schools where separate courses are not available.

INDUSTRIAL ARTS PURPOSE Personal Enrichment Pre-Technical	SELECTED STUDENT COMPETENCIES NOTE: Individual student competencies and learning experiences are to be identified and developed on a contractual basis by the student and approved by the instructor for each problem.
GRADE LEVEL 11 - 12	SAMPLE LEARNING TOPICS NOTE: Learning topics for the ITP are to be selected from the instructional units identified for each specific subject matter course. These courses include: GRAPHIC COMMUNICATIONS: -- Design/Drafting, 10053 -- Photography, 10054 -- Graphic Arts, 10052 -- Construction Drafting, 10056
COURSE LENGTH One period per day 18 or 36 weeks	
UNIT OF CREDIT $\frac{1}{2}$ or 1 unit	
RECOMMENDED PREREQUISITES Level I Curriculum Courses	

INDIVIDUAL TECHNICAL PROBLEMS: GRAPHIC COMMUNICATIONS

COURSE CODE: 10092

This individual technical problem course is designed for students who have had the Level II preliminary courses of this cluster in the chosen area of study and intend to study specific advanced information and techniques in design/drafting, photography, graphic arts, and/or construction drafting.

INDUSTRIAL ARTS PURPOSE Personal Enrichment Pre-Technical	Instruction in this industrial arts course is open to meet students needs. The following suggested objectives are meant to provide ideas for developing the student's program. 1. To prepare for seeking advanced education in the area of graphic communications. 2. To provide students the experiences in problem-solving, research and development with regard to any specific chosen means in graphic communications. 3. To provide students information regarding industrial materials, processes and the practical applications of scientific principles. 4. To provide students an understanding of industry, its place in society, and the free enterprise system. 5. To provide students an understanding in related career opportunities in graphic communications.
GRADE LEVEL 11 - 12	
COURSE LENGTH One period per day 18 or 36 weeks	
UNIT OF CREDIT ½ or 1 unit	
RECOMMENDED PREREQUISITES See Course Description	

**INDIVIDUAL TECHNICAL PROBLEMS:
GRAPHIC COMMUNICATIONS**

SAMPLE LEARNING TOPICS

DESIGN/DRAFTING:

Design/drafting as pertains to:

- I. Aerospace Engineering
- II. Civil Engineering
- III. Electrical/Electronic Engineering
- IV. Geological Engineering
- V. Mechanical Engineering
- VI. Marine Engineering
- VII. Nuclear Engineering
- VIII. Production Industry

PHOTOGRAPHY:

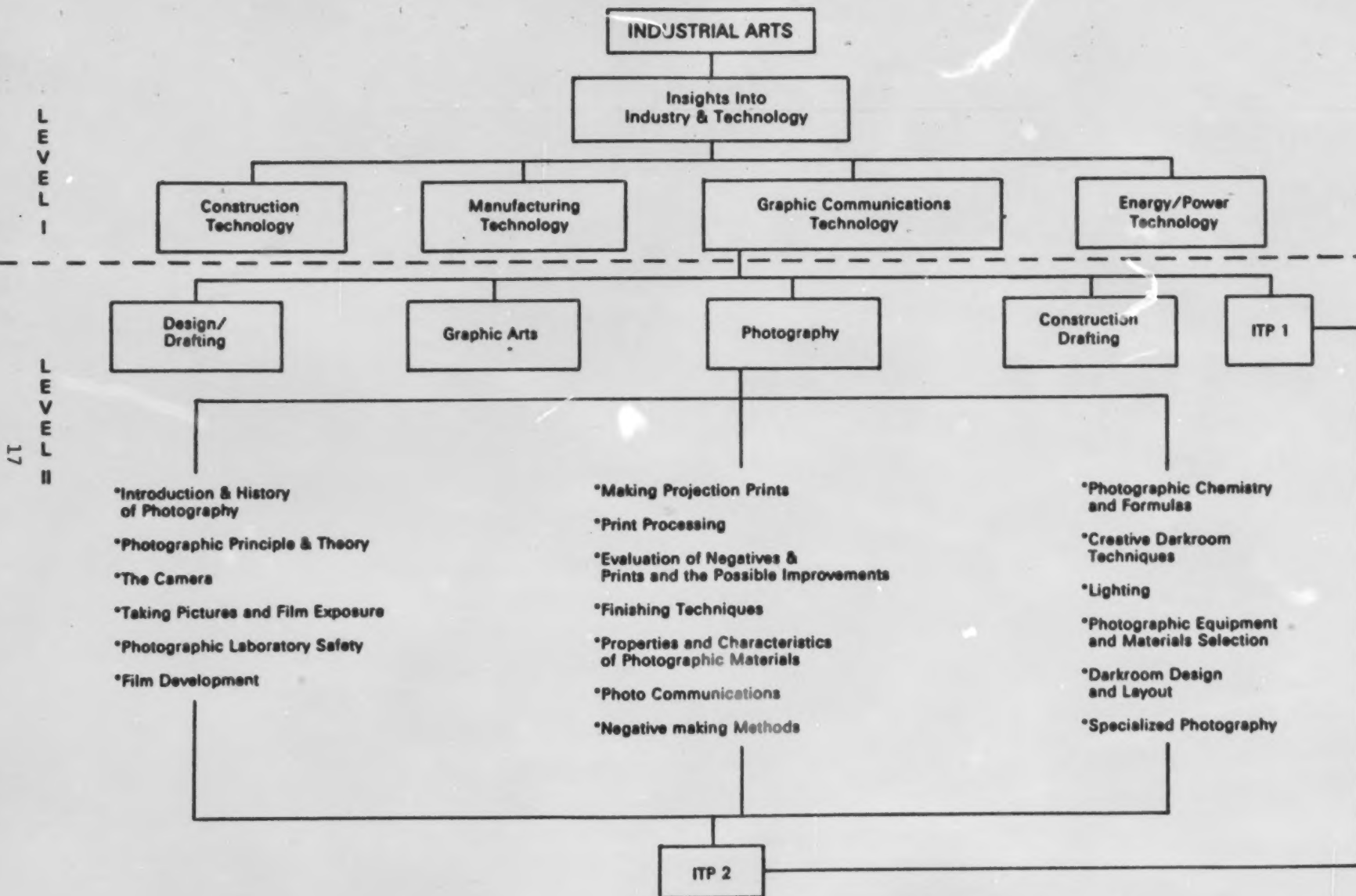
- I. Photography Education
- II. Basic Sensitometry
- III. Characteristics and Applications of Various Photographic Materials
- IV. Basic Scientific Photography
- V. Portrait Photography
- VI. Color Theory and Color Photography
- VII. Safety and Health Hazards with Photographic Chemicals
- VIII. Career Opportunities in Photography Related Industry

GRAPHIC ARTS:

- I. Photo-Offset Process
- II. Advanced Screen Printing Techniques
- III. Color Separation and Reproduction
- IV. Reproduction Techniques for Audio-Visual Materials
- V. Modern Image Generation Methods
- VI. Special Effect Reproduction
- VII. Advanced Layout and Design
- VIII. Market and Cost Analysis

CONSTRUCTION DRAFTING:

- I. Advanced Construction Drafting Education
- II. Planning and Design Considerations
- III. Resource Materials for Construction Drafting
- IV. Color Illustrations and Presentation Drawings
- V. Architectural Model Making
- VI. Landscaping Design
- VII. Interior Design



PHOTOGRAPHY

COURSE CODE: 10054

This course is designed to provide students with the necessary information and techniques in photographic theory, camera function, darkroom practices and the integration of light, photographic materials, exposure, and processing chemistry. The second semester continues with special effect techniques, lighting consideration, camera and darkroom accessories, darkroom design and set-up, specialized photography areas are also introduced to the class via lecture and related laboratory activities. Basically, the black/white photography is introduced and practiced in this course.

INDUSTRIAL ARTS PURPOSE

Personal Enrichment

Pre-Technical

GRADE LEVEL

10-12

COURSE LENGTH

One period per day

18 or 36 weeks

UNIT OF CREDIT

½ or 1 unit

RECOMMENDED PREREQUISITES

Graphic Communications

Technology, 10051

SELECTED STUDENT COMPETENCIES

Experience and activities of this industrial arts course should enable the student to:

1. Become knowledgeable of photographic theory, properties of light sensitive materials, and photographic chemistry.
2. Identify the functions of major camera elements and handle a 35mm camera properly.
3. Familiarize the operation and controls of a 35mm camera to take good, desirable pictures.
4. Demonstrate proper safety practice with regard to the facility and chemicals.
5. Process black/white negatives and printing correctly.
6. Develop proficiency in effectively composing photographs.
7. Develop proficiency in photo-image evaluation-improvement techniques.
8. Develop proficiency in communicating ideas, knowledge, or information using photography as a medium.
9. Identify the photography role in graphic communications.
10. Practice more complex negative-making methods and exposure-development control factors to consistently produce excellent prints.
11. Evaluate developed negatives and provide the solution of future improvement.
12. Produce special effect pictures with his/her own creative desires.
13. Understand what chemicals do to film and paper, and work out more intelligent and efficient processing techniques.
14. Develop proficiency in effectively controlling and using natural/artificial lights for his/her photographs.
15. Develop proficiency in selecting and manipulating camera/darkroom accessories for desirable photographs.
16. Select suitable and essential photographic equipment and materials to fulfill individual needs.
17. Develop knowledge and proficiency in specialized photography areas such as: picturing people, applied infrared photography, close up photography, photographic illustrations, and portrait techniques, etc.

PHOTOGRAPHY

Suggested Instructional Units

	Class Periods (18 wks) (36 wks)	
*I. Introduction & History of Photography	5	5
*II. Photographic Principle and Theory	5	5
*III. The Camera	5	10
*IV. Taking Pictures & Film Exposure	5	10
*V. Photographic Laboratory Safety	2	2
*VI. Film Development	5	5
*VII. Projection Prints	13	15
*VIII. Print Processing	15	15
*IX. Evaluation of Negatives & Prints and the Possible Improvement	10	10
*X. Finishing Techniques	5	8
*XI. Properties and Characteristics of Photographic Materials	5	5
*XII. Photo-Communications	15	15
XIII. Negative Making Methods		10
XIV. Photographic Chemistry & Formulas		5
XV. Creative Darkroom Techniques		20
XVI. Lighting		10
XVII. Photographic Equipment & Materials Selection		10
XVIII. Darkroom Design & Layout		5
XIX. Specialized Photography		15
TOTAL	90	180

* Recommended units of instruction for an 18-week course.

UNIT I

Introduction and History of Photography

OBJECTIVES:

To familiarize the student with a brief history of photography

To identify the photography role in graphic communications

1.0.0 History of Photography

1.1.0 The invention of photography

1.2.0 The development of photography

2.0.0 The Photography Role in Graphic Communications

2.1.0 Photography in communications

2.1.1 Photo journalism

2.1.2 Documentary photography

2.1.3 Leisure photography

2.1.4 Educational media

2.1.5 Advertising media

2.2.0 Scientific photography

2.2.1 Medical infrared

2.2.2 X-ray

2.2.3 Photomacrography

2.3.0 Engineering photography

2.3.1 Microform

2.3.2 Photodrafting

2.3.3 Inspection documentation

2.4.0 Graphic arts photography

2.4.1 Screenprinting

2.4.2 Lithography

3.0.0 Introductory Photography Processes

3.1.0 Sun pictures

3.2.0 Pearson process

3.3.0 Photograms

3.4.0 Pin hole camera

**SELECTED STUDENT COMPETENCIES
AND SAMPLE LEARNING ACTIVITIES
FOR**

Photography

UNIT I: Introduction and History of Photography

SELECTED STUDENT COMPETENCIES

SAMPLE LEARNING ACTIVITIES

**THE LEARNING ACTIVITIES SHOULD
ENABLE THE STUDENT TO:**

A. Identify and describe the role of photography as it progressed through the years.

A.1 The student will read and participate in classroom discussion dealing with the history of photography.

A.2 The student will collect samples from various sources and explain how they relate to graphic communications.

A.3 The students will participate in a field trip to area graphic communication business and industry.

B. Become familiar with introductory photography processes.

B.1 The student will experiment with introductory photography processes.

B.2 The student will report the finding as a result of the photographic experimentation.

UNIT II

Photographic Principle and Theory

OBJECTIVES:

To become knowledgeable of photographic theory, properties of light sensitive materials, and photographic chemicals

1.0.0 Photographic Theory

1.1.0 Light

- 1.1.1 Wave theory
- 1.1.2 Visible light spectrums
- 1.1.3 Reflection, refraction, and transmission

1.2.0 Chemistry

- 1.2.1 Silver and silver compound
- 1.2.2 Reducing agent
- 1.2.3 Fixing agent
- 1.2.4 Toning agent

2.0.0 Properties of Light Sensitive Materials

2.1.0 Characteristics of photographic film

- 2.1.1 Color sensitivity
- 2.1.2 Light sensitivity
- 2.1.3 Granular structure
- 2.1.4 Contrast

2.2.0 Characteristics of photographic paper

- 2.2.1 Physical properties
- 2.2.2 Optical properties

3.0.0 Photographic Chemicals

3.1.0 Film processing chemicals

3.2.0 Paper processing chemicals

3.3.0 Chemical preparation

3.4.0 Chemical storage and capacity

**SELECTED STUDENT COMPETENCIES
AND SAMPLE LEARNING ACTIVITIES
FOR**

Photography

UNIT II: Photographic Principle and Theory

SELECTED STUDENT COMPETENCIES

SAMPLE LEARNING ACTIVITIES

**THE LEARNING ACTIVITIES SHOULD
ENABLE THE STUDENT TO:**

**A. Become familiar with photo-
graphic theory.**

**A.1 The student will read and
participate in class
discussions.**

**A.2 The student will participate
in analyzing the visible
light spectrums.**

**B. Become familiar with the
characteristics of photographic
materials.**

**B.1 The student will experiment
with several different types
of black and white photographic
film and paper under various
filtered light sources.**

**B.2 The student will report the
photographic effect from the
processed results.**

**C. Understand the processing of
chemicals needed for black and
white photography.**

**C.1 The student will read and
participate in class discussions.**

**C.2 The student will mix chemicals
to the stock solutions.**

UNIT III

The Camera

OBJECTIVES:

To identify the function of major camera elements and handle a 35 mm camera properly

To familiarize the operation and controls of a 35 mm camera to take good, desirable pictures

1.0.0 The Anatomy of the Camera

1.1.0 The viewing system

1.2.0 The film

1.3.0 The film advance

1.4.0 The camera body

1.5.0 The diaphragm

1.6.0 The shutter

1.7.0 The lens

1.8.0 The focusing control

2.0.0 The Four Major Types of Cameras

2.1.0 Viewfinder

2.2.0 Single-lens reflex

2.3.0 Twin-lens relex

2.4.0 View camera

3.0.0 The Camera Controls

3.1.0 Focusing systems

3.1.1 Ground glass

3.1.2 Rangefinder

UNIT III

4.0.0 The Shutter

4.1.0 Controller of light

- 4.1.1 Leaf shutter
- 4.1.2 Focal-plane shutter

4.2.0 Controller of motion

4.2.1 Shutter speed

5.0.0 The Aperture

5.1.0 Controller of light

5.1.1 F-stop

5.2.0 Controller of depth of field

6.0.0 Shutter and Aperture Used Together

6.1.0 Shutter speed and F-stop

7.0.0 Camera Handling

8.0.0 Lens

8.1.0 Lens to form an image

8.2.0 Types of lenses

- 8.2.1 Modern compound lens
- 8.2.2 Lens focal length
- 8.2.3 Normal lens
- 8.2.4 Long lens
- 8.2.5 Short lens
- 8.2.6 Special purpose lenses

Photography

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UNIT IV

Taking Pictures and Film Exposure

OBJECTIVES:

To develop proficiency in effectively composing photography

To develop an understanding of the importance of correct film exposure

1.0.0 Exposure Controls

1.1.0 Aperture opening

1.2.0 Shutter speed

1.3.0 Film speed

1.4.0 Combining the controls

1.4.1 Aperture and shutter

2.0.0 Determining Exposures

2.1.0 Light meters

2.1.1 Handheld

2.1.2 Through the lens

2.1.2.1 Spot

2.1.2.2 Averaging

2.2.0 Exposure systems

2.2.1 Average the shadows and the highlights

2.2.2 A general reading

2.2.3 Grey card

2.2.4 Expose for shadows and compensate

2.2.5 Bracket

3.0.0 Composing Photographs

3.1.0 Picture taking

3.1.1 Subject position

3.1.1.1 Closeness

3.1.1.2 Leading lines

3.1.1.3 Add interest

3.1.1.4 Show detail

UNIT IV

3.1.2 Viewing angle

3.1.2.1 Background

3.1.2.2 Lighting

3.2.0 Cropping

**SELECTED STUDENT COMPETENCIES
AND SAMPLE LEARNING ACTIVITIES
FOR**

Photography

UNIT IV: Taking Pictures and Film Exposure

SELECTED STUDENT COMPETENCIES	SAMPLE LEARNING ACTIVITIES
THE LEARNING ACTIVITIES SHOULD ENABLE THE STUDENT TO: A. Recognize properly composed photographs and to become aware of composition principles. B. Understand the exposure control system of the camera.	A.1 The student will participate in class discussion and a presentation on composition. A.2 The student will practice composing various types of photographs. A.3 The student will collect and critique samples of photographs with good/bad composition. B.1 The student will participate in a class assignment to familiarize the exposure control system. B.2 The student will experiment with bracketing exposures. B.3 The student will examine the processed results and compare the differences in density.

UNIT V

Photographic Laboratory Safety

OBJECTIVES:

To demonstrate proper safety practice with regard to the facility and chemicals

1.0.0 Facility and Equipment

1.1.0 Darkroom safety

1.2.0 Proper equipment handling

2.0.0 Chemicals

2.1.0 Chemical preparation

2.2.0 Chemical handling

**SELECTED STUDENT COMPETENCIES
AND SAMPLE LEARNING ACTIVITIES
FOR**

Photography

UNIT V: Photographic Laboratory Safety

SELECTED STUDENT COMPETENCIES

**THE LEARNING ACTIVITIES SHOULD
ENABLE THE STUDENT TO:**

- A. Understand and be aware of safety procedure in the photography laboratory.
- B. Understand and be aware of the chemicals involved in the photographic process and there reactions.

SAMPLE LEARNING ACTIVITIES

- A.1 The student will participate in class reading and discussion.
- B.1 The student will visit the science laboratory and observe some photographic chemical reaction demonstrations.

UNIT VI

Film Development

OBJECTIVES:

To correctly process black/white roll film

To learn the proper chemical sequence for black/white roll film development and the proper handling techniques

1.0.0 Roll Film Development

1.1.0 Preparing chemicals & film

1.1.1 How developer affects a negative

1.1.2 What the fixer does

2.1.0 Loading the film

3.1.0 Processing sequence

3.1.1 Time and temperature affecting development

3.1.2 Exposure and development

3.1.2.1 Under, normal, and over

3.1.3 Proper agitation and fresh solutions

3.1.4 Careful washing and drying

4.1.0 Protecting the film

5.1.0 Handling chemicals

6.1.0 Special development techniques

**SELECTED STUDENT COMPETENCIES
AND SAMPLE LEARNING ACTIVITIES
FOR**

Photography

UNIT VI: Film Development

SELECTED STUDENT COMPETENCIES	SAMPLE LEARNING ACTIVITIES
THE LEARNING ACTIVITIES SHOULD ENABLE THE STUDENT TO: A. Properly prepare various film processing chemicals in both stock and working solution forms. B. Properly load roll-film onto the developing reel. C. Understand the film development procedures.	- A.1 The student will be asked to prepare film processing chemicals according to instructions. - A.2 The student will prepare film processing chemicals in working solution form to a predetermined temperature. - B.1 The student will practice film loading with a dummy roll. - B.2 The student will load an exposure roll of film for later development. - C.1 The student will participate in laboratory activities.

UNIT VII

Projection Prints

OBJECTIVES:

To familiarize the students with correct methods of producing projection prints

1.0.0 Making Projection Prints

1.1.0 The darkroom

1.2.0 The enlarger

1.2.1 Condenser

1.2.2 Diffusion

1.3.0 Printing papers

1.3.1 Physical characteristics

1.3.1.1 Texture

1.3.1.2 Gloss

1.3.1.3 Paper base tint

1.3.1.4 Image tone

1.3.1.5 Weight

1.3.1.6 Size

1.3.1.7 Resin coating

1.3.2 Photographic characteristics

1.3.2.1 Printing grade

1.3.2.2 Speed

1.3.2.3 Color sensitivity

1.3.2.4 Latitude

1.4.0 The contact print

1.5.0 Preparing the negative

1.6.0 Test strips

1.6.1 Geometric

1.6.2 Fixed increment

1.7.0 The final exposure

**SELECTED STUDENT COMPETENCIES
AND SAMPLE LEARNING ACTIVITIES
FOR**

Photography

UNIT VII: Projection Prints

SELECTED STUDENT COMPETENCIES

SAMPLE LEARNING ACTIVITIES

**THE LEARNING ACTIVITIES SHOULD
ENABLE THE STUDENT TO:**

- A. Become familiar with the functions and operation of the enlarger.
- B. Make proper contact proofs using various methods.
- C. Perform in the darkroom using the enlarger, the procedure to produce a projection print.
- D. Become familiar with a variety of photographic printing papers.

- A.1 The student will participate in class discussion and assignments.
- A.2 The student will examine and learn to operate the enlarger.
- B.1 The student will experiment with different methods of producing contact proofs.
- C.1 The student will complete an assignment, in the darkroom, which will teach the student the proper method to complete a projection print.
- D.1 The student will complete a projection print using a variety of printing papers.

UNIT VIII
Print Processing

OBJECTIVES:

To learn the proper chemical sequence for processing prints and the proper handling techniques

1.0.0 Print Processing

1.1.0 Preparation

- 1.1.1 Equipment**
- 1.1.2 Chemicals**

1.2.0 Processing sequence

1.3.0 Proper washing and drying methods

1.4.0 Proper handling techniques

- 1.4.1 Chemical**
- 1.4.2 Print**

**SELECTED STUDENT COMPETENCIES
AND SAMPLE LEARNING ACTIVITIES
FOR**

Photography

UNIT VIII: Print Processing

SELECTED STUDENT COMPETENCIES

SAMPLE LEARNING ACTIVITIES

**THE LEARNING ACTIVITIES SHOULD
ENABLE THE STUDENT TO:**

- A. Learn the proper methods to prepare black and white print processing chemicals.

- B. Identify various enlarger designs and there differences.

- C. Learn the processing sequence which is used to process a black and white print.

- A.1 The student will aid in preparing the stock solutions for print processing.

- A.2 The student will aid in preparing the working solutions for print processing.

- B.1 The student will participate in classroom readings and discussions in regard to enlarger designs.

- C.1 The student will participate in a laboratory activity dealing with print processing.

UNIT IX

Evaluation of Negatives & Prints and and the Possible Improvement

OBJECTIVES:

To evaluate developed negatives and provide the solution of future improvement

To develop proficiency in Photo-image evaluation improvement

1.0.0 Negative Evaluation

- 1.1.0 Contrast
- 1.2.0 Focus
- 1.3.0 Density
- 1.4.0 Chemical contamination
- 1.5.0 Chemical stains

2.0.0 Print Evaluation

- 2.1.0 Exposure time
- 2.2.0 Contrast
- 2.3.0 Spots on prints
- 2.4.0 Chemical stains
- 2.5.0 Chemical contamination
- 2.6.0 Focus
- 2.7.0 Curled prints

3.0.0 Improvement Techniques

- 3.1.0 Composition
- 3.2.0 Cropping
- 3.3.0 Processing negatives and prints

**SELECTED STUDENT COMPETENCIES
AND SAMPLE LEARNING ACTIVITIES
FOR**

Photography

UNIT IX: Evaluation of Negatives & Prints and the Possible Improvement

SELECTED STUDENT COMPETENCIES

SAMPLE LEARNING ACTIVITIES

**THE LEARNING ACTIVITIES SHOULD
ENABLE THE STUDENT TO:**

A. Develop the necessary knowledge to evaluate black and white negatives.

A.1 The student will participate in classroom discussion involving negative evaluation procedures.

A.2 The student will complete a classroom/laboratory assignment which will give the student practical experience in negative evaluation.

B. Develop the knowledge to improve picture taking techniques.

B.1 The student will analyze the problems and make suggestions to improve negative making.

B.2 Based on the evaluations the student will analyze the problems and make suggestions to improve print making.

UNIT X

Finishing Techniques

OBJECTIVES:

To demonstrate the different methods for finishing prints

1.0.0 Drying Methods

1.1.0 Drying methods

- 1.1.1 Blotter
- 1.1.2 Flat-bed electric dryer
- 1.1.3 Rotary dryer
- 1.1.4 Air-dry

1.2.0 Negative and print storage

2.0.0 Print Trimming

2.1.0 Border

2.2.0 Borderless

3.0.0 Print Mounting

3.1.0 Spray-mounting

3.2.0 Dry-mounting

- 3.2.1 Hot method
- 3.2.2 Cold method

4.0.0 Overmatting

**SELECTED STUDENT COMPETENCIES
AND SAMPLE LEARNING ACTIVITIES
FOR**

Photography

UNIT X: Finishing Techniques

SELECTED STUDENT COMPETENCIES

SAMPLE LEARNING ACTIVITIES

**THE LEARNING ACTIVITIES SHOULD
ENABLE THE STUDENT TO:**

**A. Possess a working knowledge of
finishing a print for display
purpose.**

**A.1 The student will experiment
with several types of photo
print mounting.**

**A.2 The student will prepare
mounted prints which are
presentable for display.**

**B. Select the proper photo display
materials.**

**B.1 The student will identify and
select proper kinds, colors,
and sizes of display materials.**

UNIT XI

Properties and Characteristics of Photographic Materials

OBJECTIVES:

To understand what chemicals do to film and paper

To work out more intelligent and efficient processing techniques

1.0.0 Photographic Emulsions

1.1.0 Gelation

1.2.0 Silver halides

1.3.0 Degree of sensitivity

1.3.1 Emulsion

1.3.2 Color

1.3.2.1 Ordinary

1.3.2.2 Orthochromatic

1.3.2.3 Panchromatic

1.4.0 Safelights

1.5.0 Printing papers

1.5.1 Contact paper

1.5.2 Projection paper

1.6.0 Paper size

1.7.0 Paper weight

1.7.1 Light-weight

1.7.2 Single-weight

1.7.3 Medium-weight

1.7.4 Double-weight

1.7.5 Heavy-weight

1.8.0 Stock color

1.8.1 Warm-toned emulsions

1.8.2 Cold-toned emulsions

1.9.0 Surface texture

1.9.1 Glossy

1.9.2 Matte

UNIT XI

1.10.0 Paper types

1.10.1 Fiber base

1.10.2 Resin-coated (RC)

1.11.0 Paper grading

1.11.1 Contrast

1.11.1.1 0-6 (soft-ultra hard)

1.11.2 Variable (Poly) contrast

1.11.2.1 Filter pack (1-4)

1.12.0 Film emulsions

1.13.0 Sheet film

1.14.0 Roll film and cartridges

**SELECTED STUDENT COMPETENCIES
AND SAMPLE LEARNING ACTIVITIES
FOR**

Photography

UNIT XI: Properties and Characteristics of Photographic Materials

SELECTED STUDENT COMPETENCIES	SAMPLE LEARNING ACTIVITIES
THE LEARNING ACTIVITIES SHOULD ENABLE THE STUDENT TO:	
A. Understand why photographic chemicals react with photographic materials; paper, film. B. Identify the different types and photographic papers and films. C. Understand the light sensitivity of various photographic emulsions. D. Evaluate and improve the contrast level, density distribution, and density range of photographic print.	A.1 The student will participate in class discussion involving photographic materials. A.2 The student will prepare his/her own photo-sensitive material via mixing silver halides and emulsion. B.1 The student will read and participate in a class presentation on photographic papers and films. B.2 The student will experiment with different types of photographic film and paper under various safelight conditions. (Different color filters and intensities.) C.1 The student will expose various types of paper under controlled projections; light, process, and examine the density differences. D.1 The student will use poly-contrast filters and paper to produce various contrast photographic prints.

UNIT XII

Photo-Communciations

OBJECTIVES:

To develop proficiency in communication ideas, knowledge, or information using photography as a medium

1.0.0 Preplanning

1.1.0 Intended purpose

1.2.0 Intended audience

2.0.0 Design Layout

2.1.0 Titles & illustrations

2.2.0 Format

3.0.0 Script/Composition

3.1.0 Intended content

4.0.0 Presentation Method

4.1.0 Individual study

4.2.0 Reference

4.3.0 Small-group viewing

4.4.0 Display

5.0.0 Photo-Communication Techniques

5.1.0 Size

5.2.0 Arrangement

5.3.0 Physical environment

**SELECTED STUDENT COMPETENCIES
AND SAMPLE LEARNING ACTIVITIES
FOR**

Photography

UNIT XII: Photo-Communications

SELECTED STUDENT COMPETENCIES	SAMPLE LEARNING ACTIVITIES
THE LEARNING ACTIVITIES SHOULD ENABLE THE STUDENT TO: A. Develop an ability to communicate ideas through the use of black and white photographs. B. Produce title slides for a slide presentation program.	- A.1 The student will participate in a field trip to a local advertising agency. - A.2 The student will go through the process of communicating an idea using photographs. - B.1 The student will produce title slides with different types of B/W photographic film and coloring materials.

UNIT XIII

Negative Making Methods

OBJECTIVES:

To practice more complex negative-making methods and exposure-development control factors to consistently produce excellent prints

- 1.0.0 Controlling Density
 - 1.1.0 Minimum shadow density
- 2.0.0 Contrast Control
 - 2.1.0 Exposure
 - 2.2.0 Development
- 3.0.0 Zone System
 - 3.1.0 Previsualization
 - 3.2.0 The gray scale
 - 3.3.0 Zone system exposure
 - 3.4.0 Zone system development
- 4.0.0 Sensitometry
- 5.0.0 Reciprocity Failure
- 6.0.0 Close-up Photography
- 7.0.0 Filter Factors

**SELECTED STUDENT COMPETENCIES
AND SAMPLE LEARNING ACTIVITIES
FOR**

Photography

UNIT XIII: Negative Making Methods

SELECTED STUDENT COMPETENCIES	SAMPLE LEARNING ACTIVITIES
THE LEARNING ACTIVITIES SHOULD ENABLE THE STUDENT TO: A. Identify and develop a proficiency with complex negative-making methods and exposure development factors. B. Control and manipulate the desirable negative result, regarding to detail and contrast.	A.1 The student will review materials and participate in class discussion concerning negative-making methods. A.2 The student will take pictures according to the zoning exposure techniques. B.1 The student will underexpose a roll of film to achieve higher contrast and/or to increase the film speed. B.2 The student will overexpose a roll of film to achieve a lower contrast result. B.3 The student will process the roll of film with necessary development adjustments to control negative image detail and contrast.

UNIT XIV

Photographic Chemistry & Formulas

OBJECTIVES:

To acquire an understanding of photographic chemistry and formulas to improve control over processing

1.0.0 Chemicals

1.1.0 Developer

1.2.0 Stop bath

1.3.0 Fixer

1.4.0 Wash

2.0.0 Chemical Uses and Characteristics

3.0.0 Formulas

3.1.0 Chemical makeup

4.0.0 Formula Mixing

4.1.0 Equipment

4.2.0 Chemicals

5.0.0 Formula Storage Capacity

**SELECTED STUDENT COMPETENCIES
AND SAMPLE LEARNING ACTIVITIES
FOR**

Photography

UNIT XIV: Photographic Chemistry & Formulas

SELECTED STUDENT COMPETENCIES

SAMPLE LEARNING ACTIVITIES

**THE LEARNING ACTIVITIES SHOULD
ENABLE THE STUDENT TO:**

A. Acquire an ability in extended application and understanding of black and white photographic chemistry.

B. Be aware of the maximum shelf life of photographic chemicals under varying environmental conditions.

A.1 The student will participate in class reading and discussion.

A.2 The student will complete on an assignment in the usage of photographic chemistry and formulas.

A.3 The student will prepare photographic processing chemicals from the basic chemistry formula.

B.1 The student will monitor and record the shelf life and useful capacity of photographic chemicals.

UNIT XV

Creative Darkroom Techniques

OBJECTIVES:

To produce special effect pictures with his/her own creative desires

To develop proficiency in selecting and manipulating camera/darkroom accessories for desirable photographs

1.0.0 Control Techniques

1.1.0 Burning and dodging

1.2.0 Marking

1.3.0 Reducing and intensification

2.0.0 Improving Composition and Appearance

2.1.0 Vignetting

2.2.0 Diffusion

2.3.0 Distortion

3.0.0 Creating New Pictures/Old Negatives

3.1.0 Texture screens

3.2.0 Combination printing

4.0.0 Toning

5.0.0 High Contrast Photographs

6.0.0 Reticulation

7.0.0 Solarization and the Sabattier Effect

8.0.0 Posterization

**SELECTED STUDENT COMPETENCIES
AND SAMPLE LEARNING ACTIVITIES
FOR**

Photography

UNIT XV: Creative Darkroom Techniques

SELECTED STUDENT COMPETENCIES	SAMPLE LEARNING ACTIVITIES
THE LEARNING ACTIVITIES SHOULD ENABLE THE STUDENT TO: A. Develop an understanding and working knowledge of using the darkroom creatively. B. Produce special optical effect photographs by advanced darkroom techniques.	A.1 The student will participate in class reading and discussion concerning creative darkroom techniques. A.2 The student will participate in a field trip to a local photographer. B.1 The student will create a texture optical effect by using commercial or homemade screens. B.2 The student will create a composite photographic print. B.3 The student will create a solarized photographic print.

UNIT XVI

Lighting

OBJECTIVES:

To develop proficiency in effectively controlling and using natural/artificial lights for his/her photographs

1.0.0 Lighting Contrasts

1.1.0 Variables of contrast effect

1.2.0 Directionality

1.3.0 Strength

2.0.0 Natural Lighting

2.1.0 Time of day

2.2.0 Weather

2.3.0 The seasons

3.0.0 Existing Light

3.1.0 Indoor

3.1.1 Type of illumination

3.2.0 Outdoor

3.2.1 Time of day

3.2.2 Type of illumination

4.0.0 Artificial Light

4.1.0 Electronic

4.2.0 Studio lighting

4.2.1 Lighting with one source

4.2.2 Multi-light source

5.0.0 Special Lighting

5.1.0 Color lights

5.2.0 Copystand work

5.3.0 Bounce lighting

5.4.0 Outdoor fill lights

**SELECTED STUDENT COMPETENCIES
AND SAMPLE LEARNING ACTIVITIES
FOR**

Photography

UNIT XVI: Lighting

SELECTED STUDENT COMPETENCIES

SAMPLE LEARNING ACTIVITIES

**THE LEARNING ACTIVITIES SHOULD
ENABLE THE STUDENT TO:**

A. Display an awareness and understanding of effectively controlling and using natural/artificial lighting.

B. Take pictures under existing lighting conditions.

A.1 The student will participate in a field trip to a local photography studio.

A.2 The student will, through experimentation produce photographs controlling and using different forms of natural/artificial light.

B.1 The student will take pictures at various existing lighting conditions, such as: twilight scene, multiple exposure of fireworks, time exposure of night scene, etc.

UNIT XVII

Photographic Equipment & Materials Selection

OBJECTIVES:

To select suitable and essential photographic equipment and materials to fulfill individual needs

1.0.0 Purpose of Photographic Work

- 1.1.0 Hobby
- 1.2.0 Teaching
- 1.3.0 Free lance
- 1.4.0 Professional
- 1.5.0 Commercial

2.0.0 Fitness to Darkroom

- 2.1.0 Size
- 2.2.0 Design
- 2.3.0 Purpose

3.0.0 Budget Analysis

- 3.1.0 Profit
- 3.2.0 Expenditure limitations

4.0.0 Features and Durability

- 4.1.0 Material shelf life
- 4.2.0 Maintenance, repair and replacement schedule

**SELECTED STUDENT COMPETENCIES
AND SAMPLE LEARNING ACTIVITIES
FOR**

Photography

UNIT XVII: Photographic Equipment and Materials Selection

SELECTED STUDENT COMPETENCIES

SAMPLE LEARNING ACTIVITIES

**THE LEARNING ACTIVITIES SHOULD
ENABLE THE STUDENT TO:**

- A. Enable the student to effectively choose materials and equipment to fulfill individual needs.

- A.1 The student will participate in a class activity regarding selection and purchase of photographic materials and equipment.
- A.2 The students will visit a local photography studio, in-plant visual department, and commercial processing laboratory.
- A.3 The student will write a report with regards to photographic equipment and materials used in different businesses.

UNIT XVIII

Darkroom Design & Layout

OBJECTIVES:

To design a darkroom which would be suitable to fulfill individual needs

1.0.0 Purpose of the Darkroom

1.1.0 Hobby

1.2.0 Teaching

1.3.0 Free lance

1.4.0 Professional

1.5.0 Commercial

2.0.0 Need of the Darkroom

2.1.0 Temporary

2.1.1 Available space

2.2.0 Permanent

2.2.1 Location

2.2.2. Purpose

2.2.3 Size

2.2.4 Capability

2.2.5 Arrangement

2.2.5.1 Equipment placement

2.2.5.2 Flow of work

3.0.0 Budget Analysis

3.1.0 Profit

3.2.0 Expenditure limitations

**SELECTED STUDENT COMPETENCIES
AND SAMPLE LEARNING ACTIVITIES
FOR**

Photography

UNIT XVIII: Darkroom Design & Layout

SELECTED STUDENT COMPETENCIES	SAMPLE LEARNING ACTIVITIES
THE LEARNING ACTIVITIES SHOULD ENABLE THE STUDENT TO:	
A. Display an awareness of and design a darkroom which would be suitable to fulfill individual needs.	A.1 The student will read and join in class discussions regarding darkrooms design. A.2 The student will participate in a field trip to several darkroom facilities designed for different needs. A.3 The student will evaluate darkroom design from the field trip observation and make improvement recommendations. A.4 The student will design a darkroom suitable to fulfill individual needs. A.5 Through a group effort the student will design and layout a larger scale darkroom for a special purpose and function.

UNIT XIX
Specialized Photography

OBJECTIVES:

To develop knowledge and proficiency in specialized photography

- 1.0.0 Picturing People
- 2.0.0 Infrared Photography
- 3.0.0 Close-up Photography
- 4.0.0 Photographic Illustrations
- 5.0.0 Portrait Techniques
- 6.0.0 Photomacrography

**SELECTED STUDENT COMPETENCIES
AND SAMPLE LEARNING ACTIVITIES
FOR**

Photography

UNIT **XIX: Specialized Photography**

SELECTED STUDENT COMPETENCIES

SAMPLE LEARNING ACTIVITIES

**THE LEARNING ACTIVITIES SHOULD
ENABLE THE STUDENT TO:**

- A. Exhibit a knowledge and proficiency in one or more specialized photography areas.

- A.1 The student will participate in class reading and discussion regarding specialize photography.
- A.2 The student will participate in a field trip that makes use of one or more forms of specialized photography.
- A.3 The student will, through reading and experimentation become familiar with one or more areas of specialized photography.

REFERENCES

Blaker, Alfred A. Photography Art and Techniques. San Francisco, California: W.H. Freeman and Company, 1980.

Davis, Phil. Photography. (3rd Edition) Dubuque, Iowa: Wm. C. Brown Company, 1975.

Muse, Ken. Photo One. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1977.

Muse, Ken. Photo Two. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1977.

Upton, Barbara and John Upton. Photography. Boston, Massachusetts: Little, Brown and Company, 1980.

Audio Visual Programs:

All of the programs can be borrowed free on a short-term loan basis. You pay only postage for returning them to Kodak. Send request to:

Audio-Visual Library
Eastman Kodak Company
343 State Street
Rochester, New York 14650

Kodak will mail you an acknowledgment of your request and will mail you a request form for future use. Programs are scheduled on a first-come, first-served basis. Since there is a limited number of copies of each program available, we suggest that you order programs at least 4 weeks before your show (8 to 12 weeks during the busy fall/winter months) to give the company time to fill your request. Programs may not be ordered more than 11 months in advance. You should receive the program about 2 days before your scheduled show. A program listing as follows: (some programs are listed more than once.)

Title Code	Photographic Subjects
0345	Photography-How It Works (movie)
0202	The Film/Paper Story (movie)
0026	Film-How It Works (slides)
0016	Basic Picture-Taking Techniques (slides)
0008	The Beginnings of Photographic Composition (slides)
0029	Advanced Camera Handling (slides)
0038	Photo Reports Make It Happen (slides)
0005	Better Pictures by Existing Light (slides)
0079	Processing Black-and-White Film (slides)
0050	Beginning Black-and-White Printing (slides)
0051	Advanced Black-and-White Printing (slides)

Title Photographic Subjects Cont....
Code

0040 Color Printing from Color Negatives (slides)
0344 Basic Movie-Making (movie)
0366 Discovering Underwater Photography (movie)
0039 Holland-A Garden of Pictures (slides)
0365 How Winning Teen-Age Movies Are Made (movie)
0370 Travel Movies-Travel Scandinavia (movie)
0373 Watch It (movie)

Title General Interest
Code

0366 Discovering Underwater Photography (movie)
0039 Holland-A Garden of Pictures (slides)
0365 How Winning Teen-Age Movies Are Made (movie)
0319 More Than Photography-A Visit to Eastman Kodak Company (movie)
0384 Images for Imagination (movie)
0377 America's Junior Miss Program (movie)

Title Travel and Scenic
Code

0381 Canada-A Holiday in Pictures (movie)
0362 Caribbean-Picture Treasures (movie)
0336 Faraway Places-In Pictures (movie)
0363 Florida-For Fun and Pictures (movie)
0343 Fun and Pictures in the Southern Highlands (movie)
0378 Hawaii-The Picture Islands (movie)
0364 Leisureland-U.S.A (movie)
0350 Mexico-A Photo Adventure (movie)
0368 Portrait of a City-Washington, D.C. (movie)
0337 South Pacific-Picture Paradise (movie)
0370 Travel Movies-Travel Scandinavia (movie)

Title Sports
Code

0366 Discovering Underwater Photography (movies)
0324 1971
0338 1972
0353 1973
0367 1974
0369 1975
0372 1976
0375 1977
0380 1978
0383 1979
0371 1976
0376 1977
0379 1978
0382 1979
0373 Watch It (movie)
0374 Cross-Country Experience with Bill Koch (movie)

Kodak All-American Football Team (movie)

Kodak All-American Football Team

Kodak Women's All-America Basketball Team (movie)